NWS Form E-5 U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL WEATHER SERVICE **MONTHLY REPORT OF HYDROLOGIC CONDITIONS**	**HYDROLOGIC SERVICE AREA:** Pocatello, Idaho (PIH) **REPORT FOR:** **MONTH:** September **YEAR:** 2017
TO: Hydrologic Operations Division, W/OH2 National Weather Service National Oceanic and Atmospheric Administration Silver Spring, Maryland 20910	**SIGNATURE** Travis Wyatt Service Hydrologist / Acting **DATE:** October 23, 2017
When no flooding occurs, include miscellaneous river conditions, such as significant rises, record low stages, ice conditions, snow cover, droughts and hydrologic products issued (NWS Instruction 10-924).	

X **An X in this box indicates that *no* flooding has occurred for the month within this hydrologic service area.**

Overview:

Most of the area saw well above normal precipitation for the month. The five climate stations (Burley, Challis, Idaho Falls, Pocatello and Stanley) ranged from 1.07 inch of precipitation (0.33 above average) for Challis to 2.95 inches of precipitation (2.11 above average) for Pocatello. There were eight precipitation records for the month of September for our five climate locations: one in Burley, one in Idaho Falls, three in Pocatello and three in Stanley. The highest recorded monthly precipitation totals (non-SNOTEL and non-RAWS) were 3.39, 3.16, and 3.10 inches respectively at the Chubbock CoCoRaHs, Pocatello CoCoRaHs, and the Downey CO-OP station. The highest recorded 24-hr precipitation (non-SNOTEL and non-RAWS) occurred at the Driggs, Island Park and the Pocatello City CO-OP stations where 2.57, 2.20 and 1.54 fell respectively on the 23th 18th and 21st. All basins were above normal. Basin ranged from 202 to 314 percent of normal. The basins receiving the greatest precipitation were Henrys Fork at Falls River, Henrys Fork abv Rexburg, Portneuf, and the Snake River abv American Falls receiving 314%, 296%, 278% and 278% of average precipitation respectively for the month of September-based on SNOTEL data.

Mean average temperatures ranged from 48.4 degrees F for Stanley to 63.6 degrees F for Shoshone across the HSA. Our extreme eastern locations had spots that were as low as -3 below normal and our extreme northwest locations had spots as high as 3 degrees above normal. The five climate stations ranged from -.3 below normal for Idaho Falls to 2.7 above normal for Stanley. There were nine high temperature records near the beginning of the month of September for our five climate locations: two in Challis, one in Pocatello, and six in Stanley. There were also three monthly high records in the month of September for our climate locations: one in Pocatello, one in Challis, and one in Stanley. Of the data available for the month, the stations (non-SNOTEL and non-RAWS) within the HSA reaching the highest 24-hour temperatures were Shoshone COOP , Massacre Rocks COOP, and Pocatello Airport reaching 100°F, 100°F, and 98°F respectively on the 4th, 4th and 3rd. The station (non-SNOTEL and non-RAWS) with the lowest recorded temperature were the Stanley and Minidoka Dam COOP stations at 19°F and 23°F respectively on the 26th and 16th .

As far as the short-term 8 to 14 day Climate Prediction Center Outlook is concerned, the eastern Idaho forecast is a 40 percent chance for above normal temperatures and a 40 percent chance for below normal precipitation. The one-month forecast graphics are below. For the three-month outlook, the temperature forecast is a 33 percent chance to be above normal. As for three-month outlook for precipitation, the outlook is a 33 percent

chance to be above normal for our northern areas and an equal chance for above or below normal for our extreme southern areas.

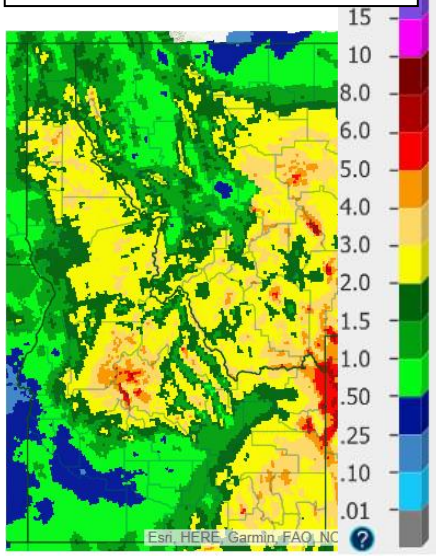
Storage for reservoirs in the Upper Snake River basin system for September stayed the same as August with irrigation demand dropping off and much higher than normal precipitation in September. As of October 18, the Upper Snake River system was sitting at 72% of capacity. Compared to last year at that time, it was about 22% of capacity. As of September 30, 2017, Oakley, Little Wood, American Falls, Magic, and Milner had the lowest percent of average capacity at 38%, 42%, 49%, 57%, and 68% of average respectively. All other reservoirs were at or above 74% capacity. All reservoirs as of September 30, 2017 were 108 % or higher above average for that time of year. Some reservoirs were well above average for that time of year. Mackay, Magic and Little Wood reservoirs were at 536%, 225% and 211% above average for that time of year.

Current streamflow conditions in eastern Idaho are much above normal for the Big Wood and the headwaters of the Salmon. The Big Lost river and the Bear river near the Wyoming Border are above normal. Most of the rest of the basins are normal (see USGS streamflow graphic below).

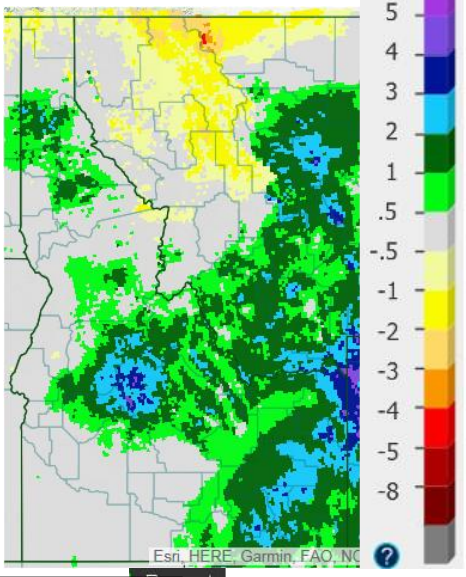
Drought conditions across the Central Mountains, Pahsimeroi/Lemhi Ranges, and the central portion of western Idaho are abnormally dry and with the panhandle of Idaho having moderate drought as reflected on the latest U.S. Drought Monitor. The latest update of the U.S. Seasonal Drought Outlook shows the panhandle of Idaho dropping out of drought conditions.

Precipitation:

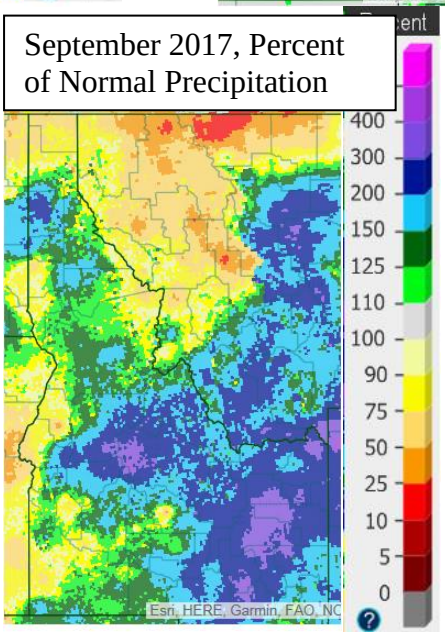
September 2017, Observed Precipitation



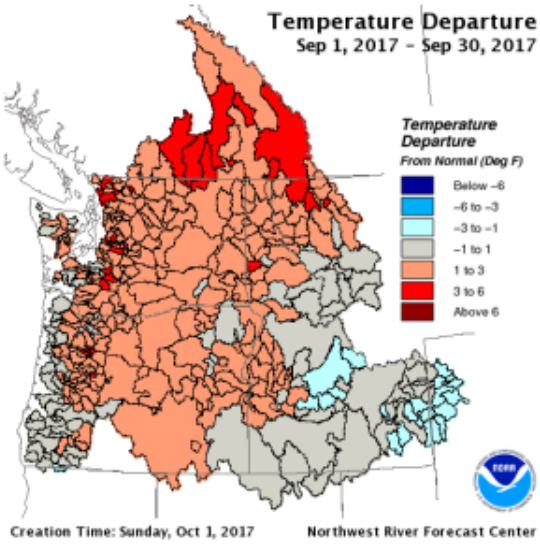
September 2017, Departure from Normal Precipitation

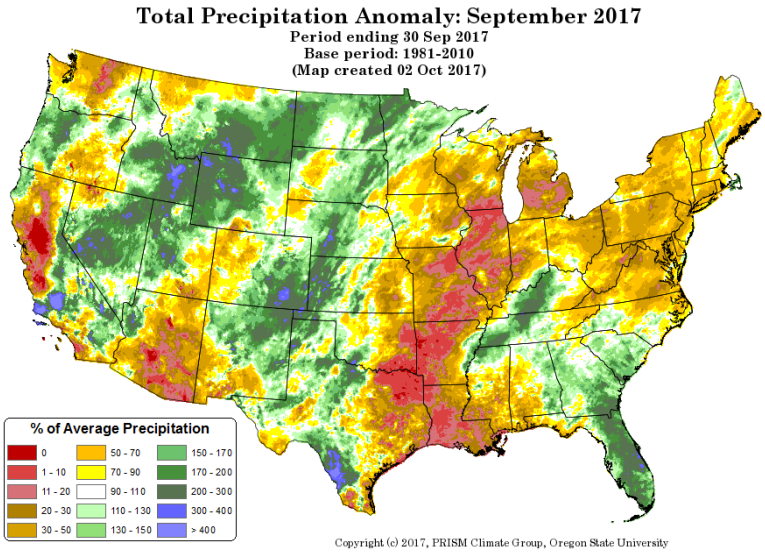


September 2017, Percent of Normal Precipitation



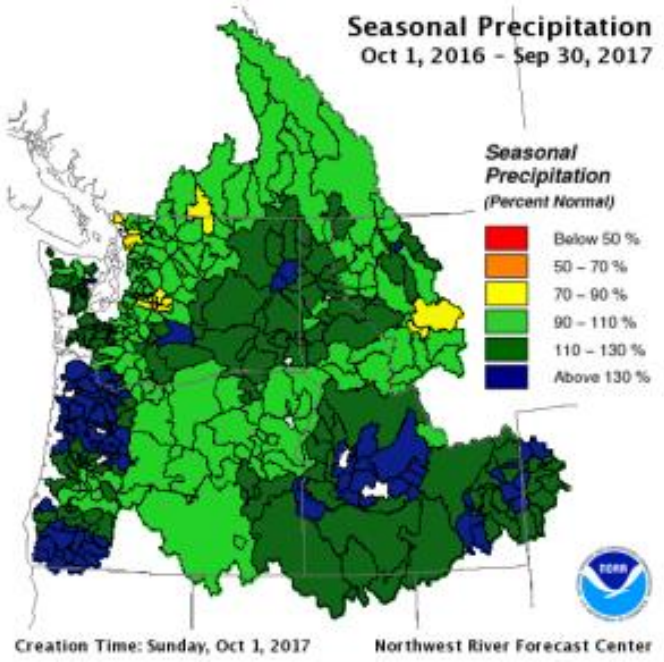
http://water.weather.gov/precip/

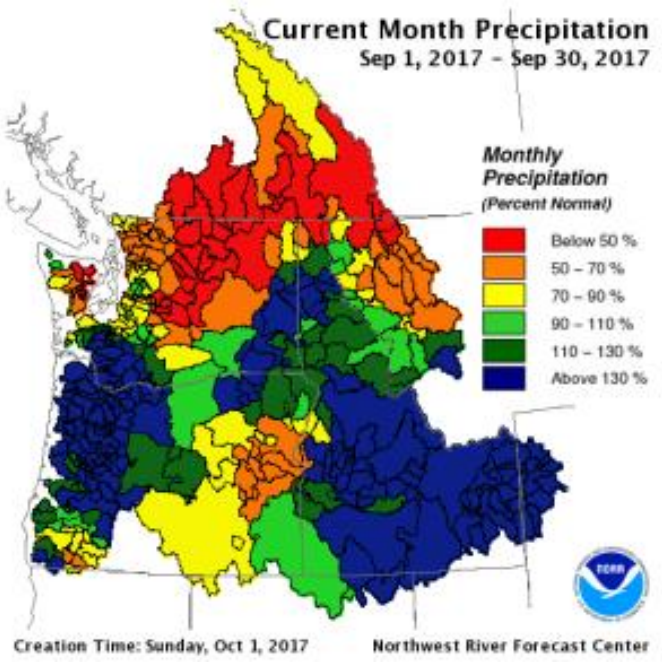




https://www.nwrfc.noaa.gov/WAT_RES_wy_summary/20170701/CurMonMAT_2017Jun30_2017070117.png

http://prism.oregonstate.edu/comparisons/anomalies.php





https://www.nwrfc.noaa.gov/WAT_RES_wy_summary/20170701/CurMonMAT_2017Jun30_2017070117.png

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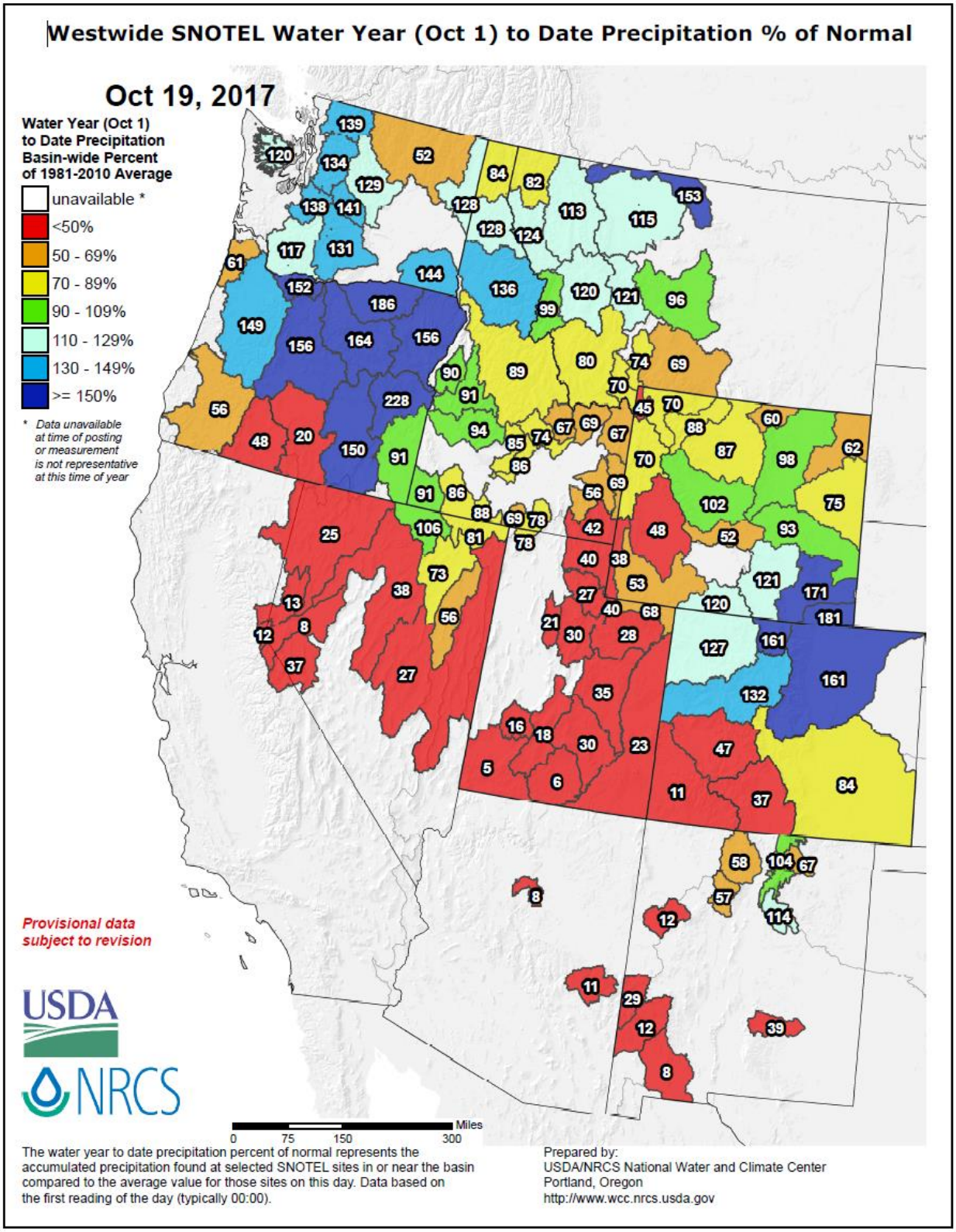
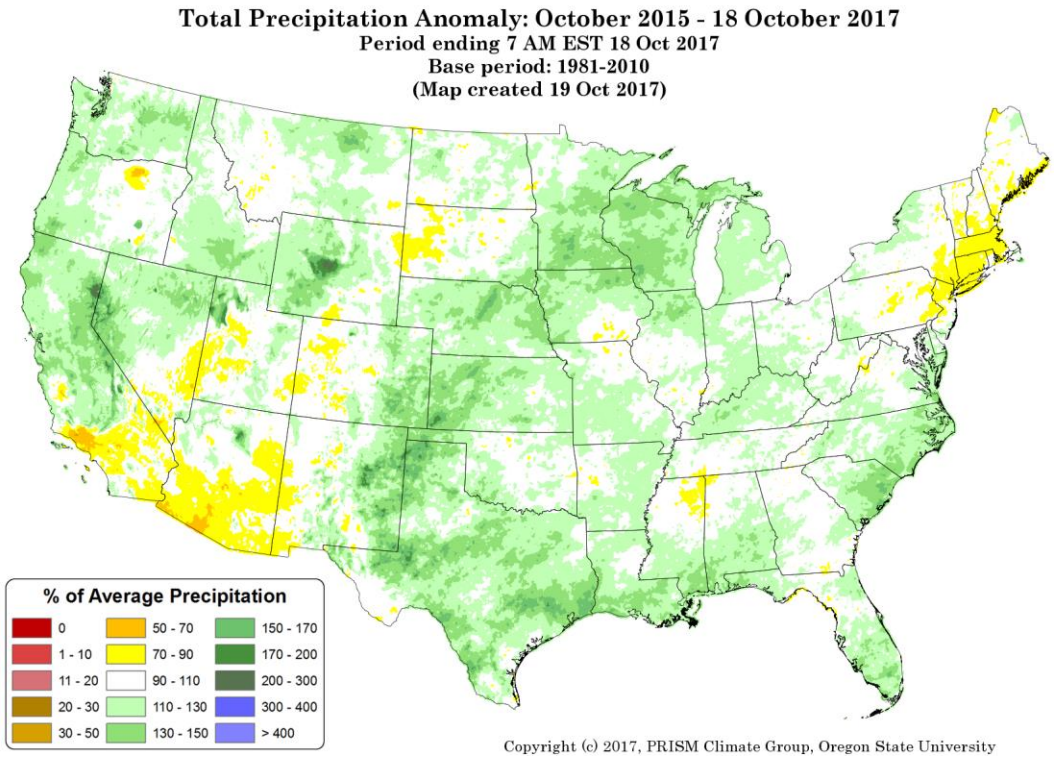
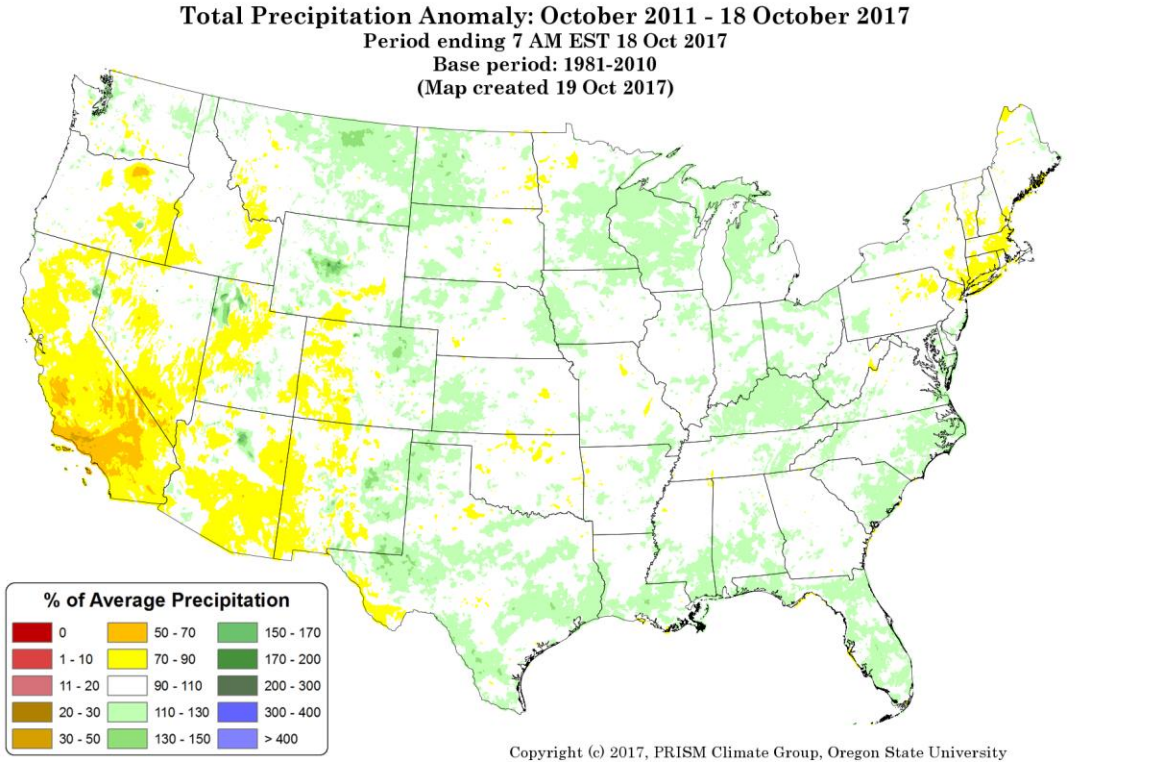


http://www.wcc.nrcs.usda.gov/ftpref/data/water/wcs/gis/maps/west_wytdprecpctnormal_update.pdf

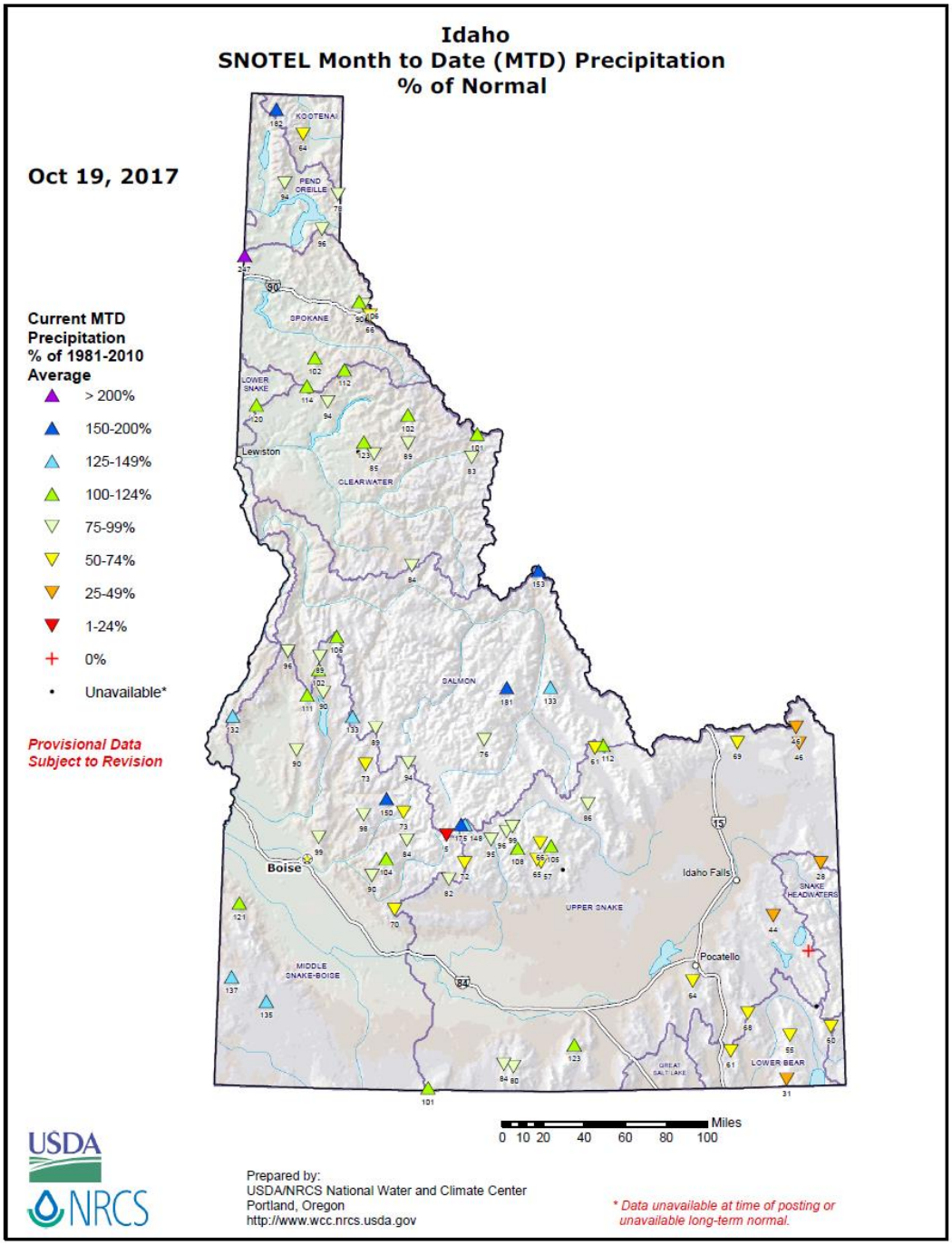
Past 2 Years of Precipitation % of Average:



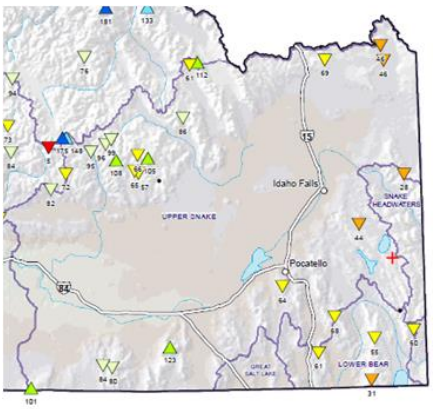
Past 6 Years of Precipitation % of Average:



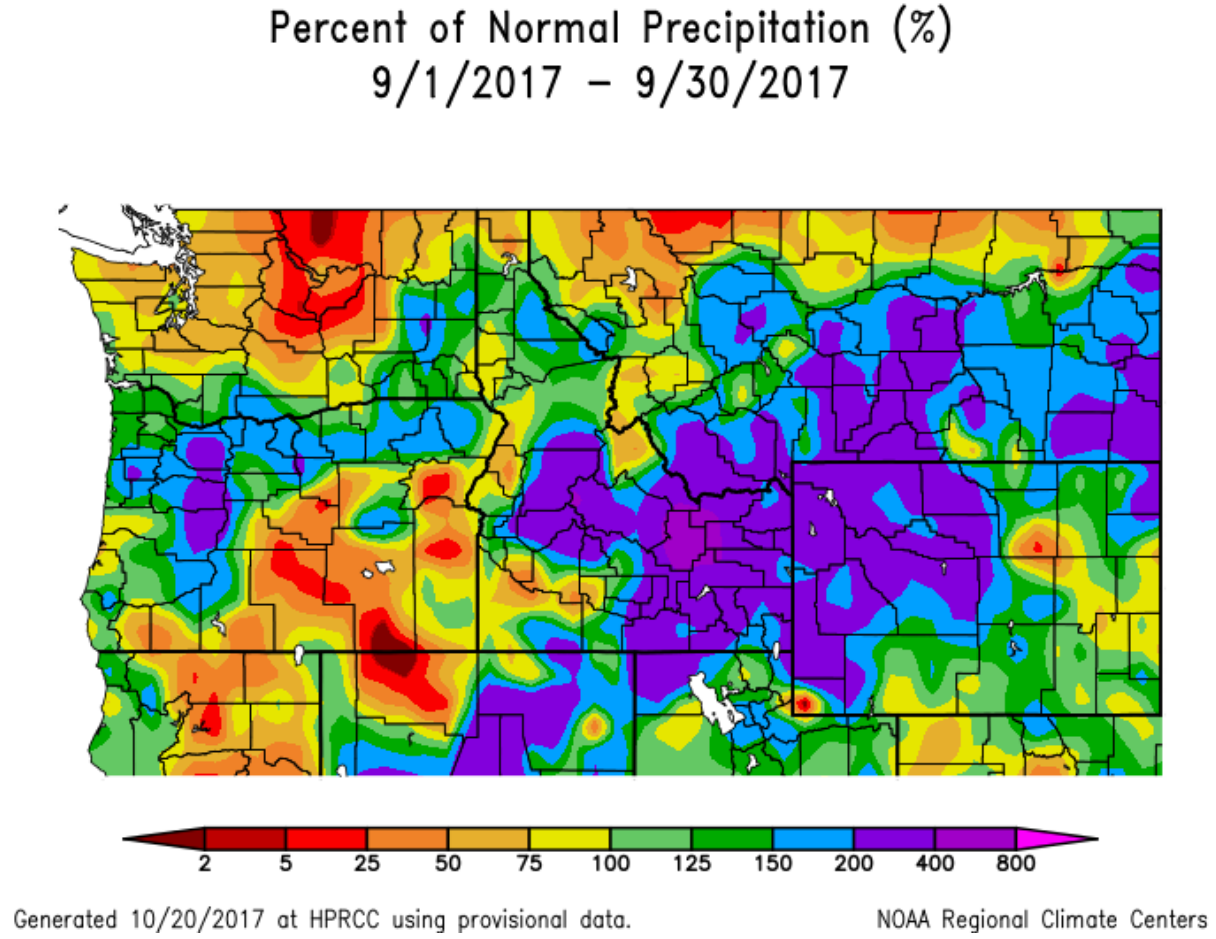
www.prism.oregonstate.edu/comparisons/drought.php



http://www.wcc.nrcs.usda.gov/ftpref/data/water/wcs/gis/maps/id_mtdprecpctnormal.pdf



SNOTEL MTD % of Normal Precipitation for thru Mid October 2017
(image is cropped from above image)



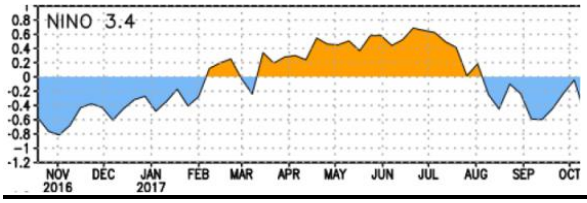
http://www.hprcc.unl.edu/maps.php?map=ACISClimateMaps

Most of our area received 150 to 400 percent of normal precipitation.

ENSO Update:

www.wrcc.dri.edu/snotelanom/basinswe.html

Latest Observed SST Departure:
Niño 3.4 ~ -0.5 Deg C



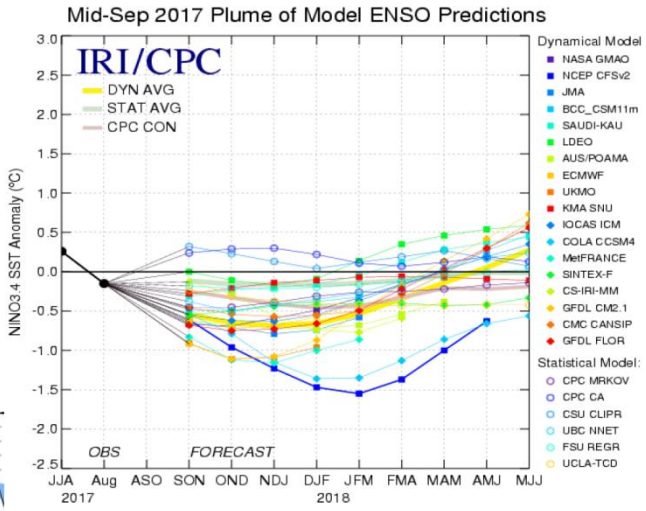


Figure provided by the International Research Institute (IRI) for Climate and Society (updated 19 September 2017).

www.cpc.ncep.noaa.gov, **iri.columbia.edu/climate/ENSO**

CPC Synopsis: ENSO-neutral conditions are present. La Nina conditions are favored (~55%-65%) during the Northern Hemisphere fall and winter 2017-2018.

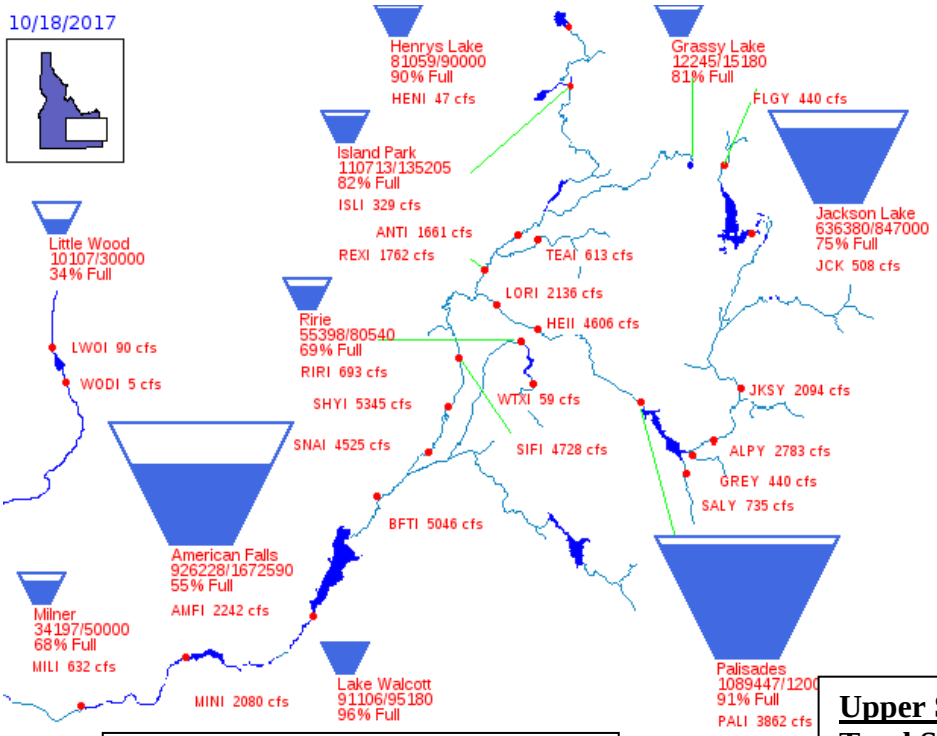
Note: Equatorial sea surface temperatures (SSTs) are near-to-below average across the central and eastern Pacific Ocean. There has been a recent strengthening of the MJO signal during the past 2 weeks, with the enhanced convective phase located over the Maritime Continent region. Available 200-hPa velocity potential anomaly forecasts predict eastward propagation of the current MJO signal from the Maritime Continent to the central Pacific during the next two weeks; thereafter, followed by rapid weakening of the signal. The MJO signal favors tropical cyclone development over the West Pacific during Week-1.The Pacific Decadal Oscillation (PDO) continues to be slightly negative.

Reservoirs:

Reservoir	% Capacity August 31[1]	% Capacity September 30[2]	Percent Change	% of Average[2]	% of Average Last Year[2]
Jackson Lake	87	77	-10	154	105
Palisades	93	76	-17	141	40
Henrys Lake	92	91	-1	108	99
Island Park	85	81	-4	180	44
Grassy Lake	78	80	+2	108	110
Ririe	96	95	-1	170	109
Blackfoot	76	74	-2	160	119
American Falls	54	49	-5	191	42
Mackay	91	86	-5	536	173
Little Wood	59	42	-17	211	135
Magic	70	57	-13	225	116
Oakley	42	38	-4	189	68
Bear Lake	88	86	-2	187	70
Lake Walcott	95[3]	96[4]	1	n/a	n/a
Milner	74[3]	68[4]	-6	n/a	n/a

Source: (1) NRCS August 31, 2017; (2) NRCS September 30, 2017.
(3) US Bureau of Reclamation (BOR) Sep 5, 2017 (4) BOR Oct 18, 2017

http://www.wcc.nrcs.usda.gov/ftpref/support/water/SummaryReports/ID/BRes_10_2017.pdf

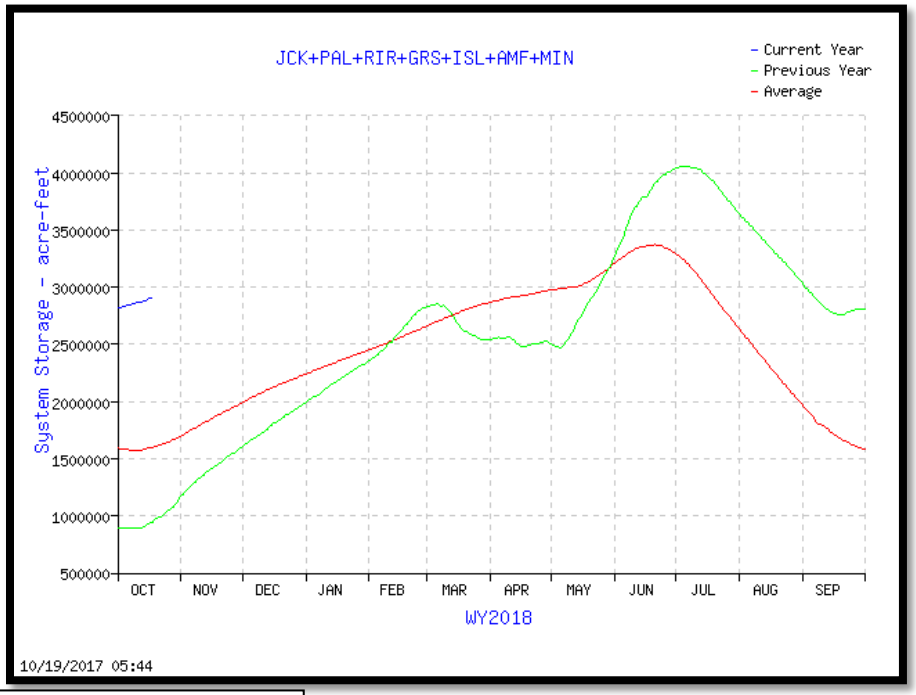


www.usbr.gov/pn/hydromet/burtea.html

72% of Capacity in Upper Snake River System
(Jackson Lake, Palisades, Grassy Lake, Island Park, Ririe, American Falls & Lake Walcott)

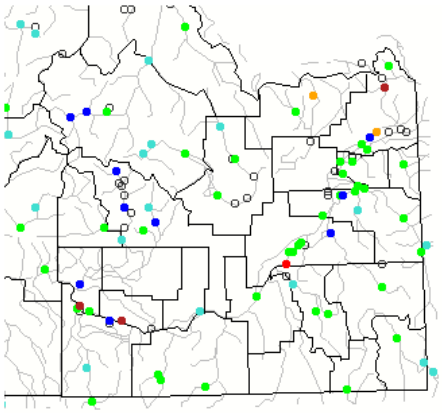
Upper Snake River:
Total Space Available: 1,117,957 AF
Total Storage Capacity: 4,045,695 AF

Graph of Upper Snake River Current Total System Reservoir Storage



https://www.usbr.gov/pn-bin/graphwy.pl?snasys_af

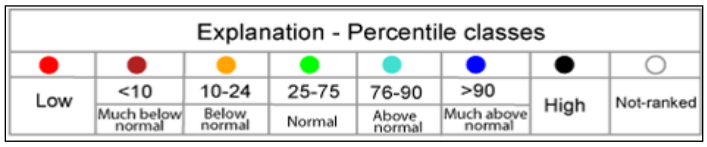
Streamflow:

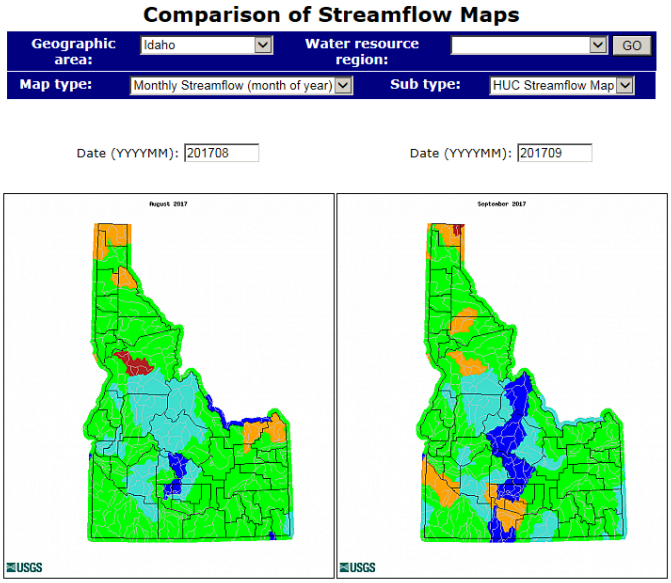


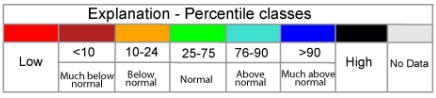
Monthly average streamflow compared to historical average streamflow for September 2017.

USGS

https://waterwatch.usgs.gov/index.php?r=id&id=mv01d



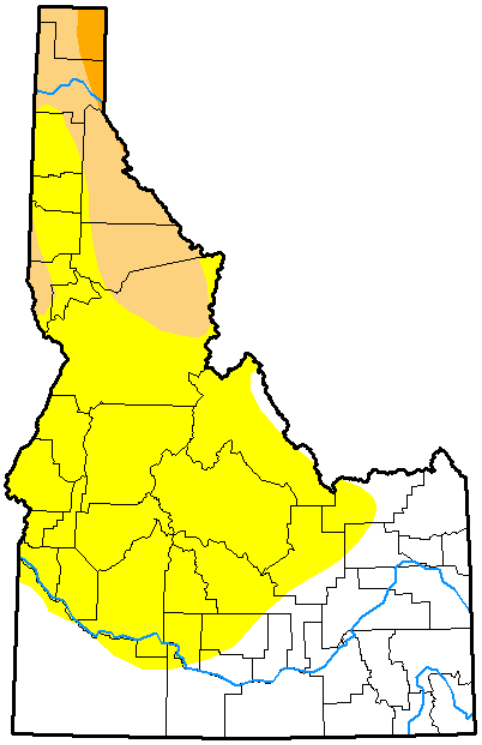




http://waterwatch.usgs.gov/index.php?id=wwchart_map2

Drought:

U.S. Drought Monitor
Idaho



October 17, 2017
(Released Thursday, Oct. 19, 2017)
Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	36.78	63.22	13.02	1.18	0.00	0.00
Last Week 10-10-2017	36.69	63.31	16.28	1.18	0.00	0.00
3 Months Ago 07-18-2017	88.79	11.21	0.00	0.00	0.00	0.00
Start of Calendar Year 01-03-2017	89.98	10.02	0.04	0.00	0.00	0.00
Start of Water Year 09-26-2017	35.98	64.02	16.90	1.23	0.00	0.00
One Year Ago 10-18-2016	80.49	19.51	1.04	0.00	0.00	0.00

Intensity:

- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:
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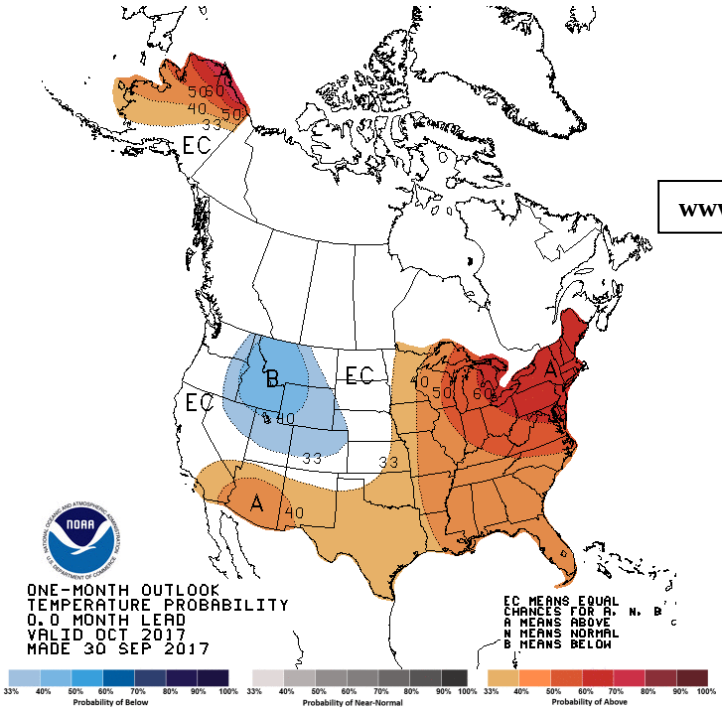
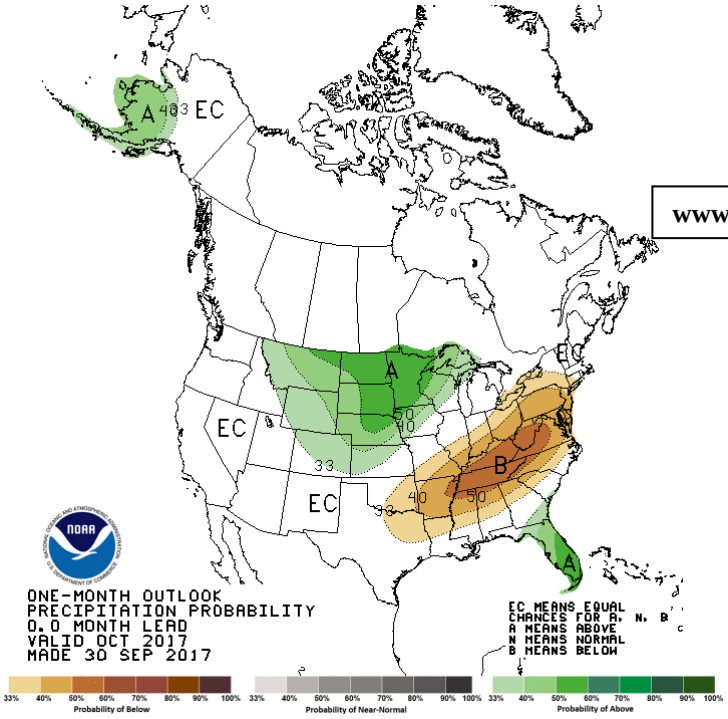
NCEI/NOAA

http://droughtmonitor.unl.edu/



www.cpc.ncep.noaa.gov/products/predictions/30day/off15_temp.gif



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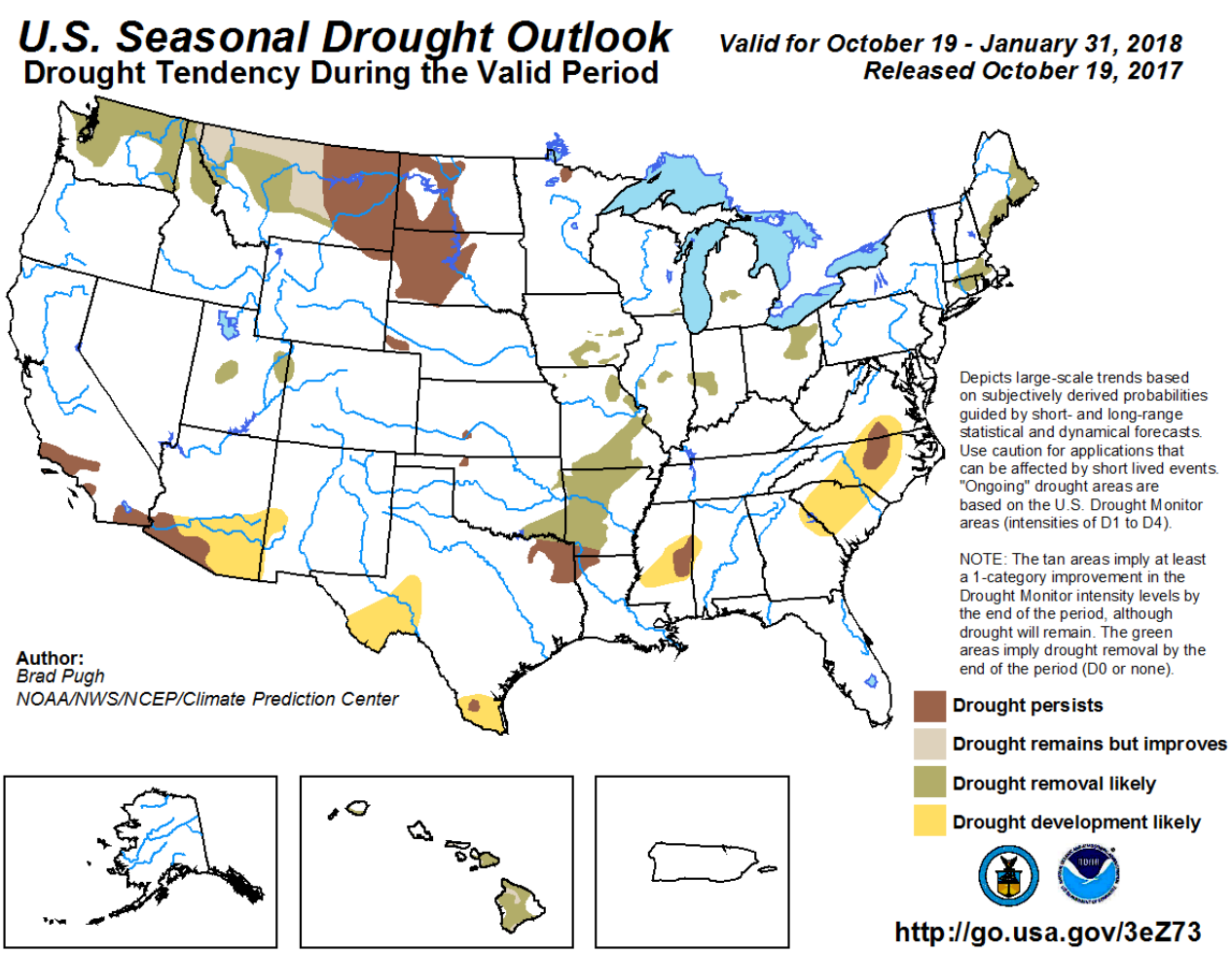

www.cpc.ncep.noaa.gov/products/expert_assessment/season_drought.png

cc:

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PIH Mets/HMT (pih.ops)

End

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